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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,613	03/01/2004	Kenneth George Stahl JR.	GP-304342	8855

7590 12/15/2005  
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EXAMINER

LIN, ING HOUR

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/790,613

Applicant(s)

STAHL ET AL.

Examiner

Ing-Hour Lin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, ~~9~~-11, 13, 18-19 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandley et al.

Chandley et al (col. 4, lines 16+) teach the claimed casting mold 10 and method for casting an article, comprising the use of providing a casting mold including a sprue (first ingate 12), a runner system 19 comprising at least one channel (ingate 12, exit gate 15) and one

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alloyant-containing reaction chamber 14; at least one ingate 12, exit gate 15; at least one mold element 10a, 10b; means for adjusting the chemistry of molten metal by disposing a metallurgical modifier (alloyant 20) within the at least one chamber; at least one mold core 17; porous ceramic filter 60 and vacuum means 46 for controlling the flow of molten metal through the chamber. Chandley et al teach and example the melt including iron castings and fail to specifically teach the molten aluminum as the melt. However, the prior art of Chandley et al claimed the casting method and casting mold configured for melt not restricting to iron castings but including general metal and alloy castings as indicated in the their claims. Therefore, it would have been obvious to one having ordinary skill in the art to use the casting method and casting mold configured in the prior art of Chandley et al in order to cast molten aluminum with a metallurgical modifier selected for treating the molten aluminum.

4. Claims 2-4 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandley et al in view of Hornung et al.

Chandley et al fail to teach the use of metallurgical modifier including strontium alloy. However, Hornung et al (col. 2, lines 26+) teach the use of metallurgical modifier including ferrosilicon inoculant of strontium alloy including 0.1 to 10% strontium including strontium alloy for the purpose of inoculating the melt and a gray cast iron. It would have been obvious to one having ordinary skill in the art to provide Chandley et al the use of metallurgical modifier including ferrosilicon inoculant of strontium alloy as taught by Hornung et al in order to effectively of inoculate the melt and a gray cast iron.

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5. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandley et al in view of either Trager et al or Craig et al.

Chandley et al fail to teach the use of metallurgical modifier in the form of bar stock or granular form or pellet form. However, Trager et al (col. 1, lines 36+) teach the use of metallurgical modifier in the form of bar stock or granular form and Craig et al (col. 5, lines 36+) teach the use of pellet form. Each form of inoculating is used for the purpose of controlling inoculating dissolution rate in the melt iron. It would have been obvious to one having ordinary skill in the art to provide Chandley et al the use of metallurgical modifier in the form of bar stock or granular form or pellet form as taught by either Trager et al or Craig et al in order to effectively control inoculating dissolution rate in the melt iron.

6. Claims 12, 17, 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandley et al in view of Fisher et al.

Chandley et al fail to teach the use of silicon carbide coated ceramic foam filter and the use of a plurality of cavities and channels having metallurgical modifier. However, Fisher et al (col. 4, lines 64+) teach the use of silicon carbide coated ceramic foam filter 5 and the use of a plurality of cavities 6A-6J and channels having metallurgical modifier for the purpose of inoculating the melt iron. It would have been obvious to one having ordinary skill in the art to provide Chandley et al the use of silicon carbide coated ceramic foam filter and the use of a plurality of cavities and channels having metallurgical modifier as taught by Fisher et al in order to effectively of inoculate the melt iron.

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7. Claims 14-16 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandley et al in view of Daussan et al.

Chandley et al fail to teach the use of a plurality of chambers each containing metallurgical modifier. However, Daussan et al (col. 3, lines 48+) teach the use of a plurality of chambers formed by filters plates 14 and 15 having a series of filter holes 17 each containing metallurgical modifier for the purpose of inoculating the metal melt. It would have been obvious to one having ordinary skill in the art to provide Chandley et al the use as taught by Daussan et al in order to effectively of inoculate the metal melt.

#### ***Response to Arguments***

8. Applicant's arguments filed on September 21, 2005 have been fully considered but they are not persuasive. Applicant argued that in prior art of Chandley et al, iron castings are exemplified and noted through the specification and argued that the method and apparatus are not appropriated for aluminum castings in the amended claims. However, the prior art of Chandley et al claimed the casting method and casting mold configured for melt not restricting to iron castings but including general metal and alloy castings as indicated in the their claims.

Therefore, it would have been obvious to one having ordinary skill in the art to use the casting method and casting mold configured in the prior art of Chandley et al in order to cast molten aluminum with a metallurgical modifier selected and cited in this office action for treating the molten aluminum.

*Conclusion*

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ing-Hour Lin whose telephone number is (571) 272-1180. The examiner can normally be reached on M-F (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*I. H. Lin*

I.-H. Lin

12-09-05

**KEVIN KERNS**  
**PRIMARY EXAMINER**

*Kevin Kerns 12/12/05*